

Environment and Natural Resources Trust Fund 2020 Request for Proposals (RFP)

Project Title:

ENRTF ID: 139-CH

Driving Conservation Behavior for Mussels and Water Quality

Category: H. Proposals seeking \$200,000 or less in funding

Sub-Category: C. Environmental Education

Total Project Budget: \$ 191,580

Proposed Project Time Period for the Funding Requested: June 30, 2023 (3 yrs)

Summary:

The Minnesota Zoo will develop research-supported strategies to engage the public in specific conservation behaviors they can take in order to improve water quality and mussel health across the state.

Name: Emily Kalnicky

Sponsoring Organization: Minnesota Zoo

Job Title: Dr.

Department:

Address: 13000 Zoo Boulevard

Apple Valley MN 55124

Telephone Number: (952) 431-9209

Email emily.kalnicky@state.mn.us

Web Address: <http://mnzoo.org/>

Location:

Region: Statewide

County Name: Statewide

City / Township: Statewide

Alternate Text for Visual:

Five circles-arrows between, and text: select behaviors, uncover barriers & benefits, develop strategy, pilot strategy, implement broadly & evaluate. Four other circles-text goals plus pictures of healthy mussels, clean water.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____ %



PROJECT TITLE: Driving Conservation Behavior for Mussels and Water Quality

I. PROJECT STATEMENT

In order to effectively conserve and preserve native mussels and improve water quality in Minnesota, we must engage the public in specific conservation actions that they can take to have a positive impact. Building upon the Minnesota Zoo's novel educational and large-scale informational campaign (*Show Us Your Mussels Challenge*) and research on the biology of native mussels, which have been previously funded through ENRTF, we propose to use social science to develop a research-supported public engagement campaign in order to foster conservation behaviors beneficial to Minnesota mussels and waterways.

Our innovative approach combines natural science research on native mussels with a public engagement campaign grounded in social science research on behavior change. This interdisciplinary approach will enable us to have broad public participation in conservation behaviors to conserve and benefit native mussels and water quality across the state. We chose to focus this project on native mussels as native mussels serve as critical ecosystem engineers, creating habitat for fish and other aquatic wildlife and helping to keep Minnesota's waterways clean. However, mussel populations in many of Minnesota's waterways have been significantly depleted, in part, due to behaviors many general public may be unintentionally participating in. Examples of these actions may include not scooping pet waste (i.e., improper pet waste disposal) or using too much road or sidewalk salt in winter. By using a social science framework for fostering conservation behavior change, we will identify the specific behaviors the public can participate in that will have the greatest impact on water quality and mussel health. We will then develop a strategy to reduce any barriers, and enhance any perceived benefits the public has with regards to participating in that specific behavior. Once we have developed the public engagement strategy, we will implement, evaluate, and refine so that we have the greatest positive impact on water quality and mussel health across Minnesota. We are asking for \$191,580 from ENRTF to complete the proposed project.

As a result of the proposed project, we will:

- Identify the specific conservation behaviors that would have the greatest benefit on native mussels and water quality in Minnesota.
- Implement strategies to encourage public participation in those conservation behaviors to benefit waterways and aquatic wildlife across Minnesota.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1 Title: Broad Public Behavior Change Strategy Research, Implementation and Refinement

Description: Based on initial research at the Zoo, we are most interested in focusing the behavior change campaign on animal pet waste and winter road or sidewalk salt usage. These are two areas in Minnesota that have a large impact on water quality and mussel health. However, the actual behavior(s) selected will be determined from the data and initial selection in consultation with the contracted specialist. Once we have identified the behavior of interest we will then pilot strategies designed to encourage the public to change their behavior in order to positively impact water quality and native mussels. We will pilot, evaluate, and revise the strategy before a broad implementation of the strategy to the public. The Minnesota Zoo will contract an outside specialist to ensure that the public's needs are addressed and the behavior change strategy and selection is grounded in social science research.

ENRTF BUDGET: \$183,510



Environment and Natural Resources Trust Fund (ENRTF)
2020 Main Proposal

Outcome	Completion Date
1. Specialist contracted and research completed.	April 2021
2. Most effective conservation behaviors identified.	Dec. 2021
3. Developed strategy for engaging the public in the conservation behavior(s).	Dec. 2021
4. Implementation, revision, and evaluation of the strategy.	May 2024
5. Final report on effectiveness and impact of the implemented strategies.	June 2024

Activity 2 Title: Outreach to Visitors at Minnesota Zoo

Description: Based on the results of Activity 1, we will design an interpretive display and signage that will be placed onsite at the Minnesota Zoo's Mussel Conservation Cabin. Onsite interpretive displays and signage enable us to reach our more than 1.3 million annual visitors, and engage them in social-science supported actions they can take to positively affect mussels and water quality.

ENRTF BUDGET: \$8,070

Outcome	Completion Date
1. Content and design of display/signage completed.	Feb 2023
2. Installation of display/signage.	June 2023

III. PROJECT PARTNERS:

Dr. Emily Kalnicky will serve as project manager. Zoo Conservation, Interpretive, Life Support, Education, and Aquariums staff will provide expertise for this project. Depending upon the behaviors and strategies identified in Activity 1, we may identify and seek a variety of partners to assist in implementing the public engagement behavior change strategy. However, the Minnesota Zoo, and successful contractors under competitive bid, would be the sole recipient of funds under this proposal.

IV. LONG-TERM- IMPLEMENTATION AND FUNDING:

This project is part of a larger, long-term, multi-partner effort to restore imperiled mussel populations in the Upper Midwest to historic levels and improve water quality. The specific project proposed in this application will contribute to these restoration efforts by focusing on actions the general public can take to support mussels and water quality across the state. We anticipate that the research and implementation conducted during this funding period will enable us to develop a foundation for an effective long-term campaign to encourage and sustain positive behaviors and public actions beneficial to native mussel conservation and water quality beyond the granting period. Having interpretive signs at the Zoo is one way we can ensure over 1 million individuals annually will be exposed to behavior change strategies resulting from this project in a sustainable way, requiring no additional resources beyond this grant. Interpretive signage has a lifespan of approximately 10 years at the Zoo. We also anticipate that Zoo staff will be able to maintain the strategy implementation across the state after the granting period for this project is complete. Depending upon the strategy identified, there may be additional costs for supplies (e.g. decals, signs, stickers) in order to continue to implement across the state. In this case, we will look for alternate, non-ENRTF sources/partners to offset any costs for continued long-term implementation.

V. SEE ADDITIONAL PROPOSAL COMPONENTS:

A. Proposal Budget Spreadsheet

B. Visual Component or Map

C. Project Manager Qualifications and Organization Description

Attachment A: Project Budget Spreadsheet
Environment and Natural Resources Trust Fund
M.L. 2020 Budget Spreadsheet

Legal Citation:

Project Manager: Emily Kalnicky

Project Title: Driving conservation behavior for mussels and water quality

Organization: Minnesota Zoo

Project Budget: \$191,580

Project Length and Completion Date: 3 years; June 30, 2023

Today's Date: April 15, 2019



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages and Benefits)		\$ 60,580	\$ -	\$ 60,580
E. Kalnicky, Evaluation and Research Specialist (1 person, 67% salary / 33% benefits), 0.10 FTE for 3 years: \$41,610				
Communication and Engagement Specialist (1 person, 67% salary / 33% benefits), 0.05 FTE for 3 years: \$14,830				
K. Quam, Graphic Designer (1 person, 86% salary / 14% benefits), 0.02 FTE in year 2 and year 3: \$4,140				
Professional/Technical/Service Contracts				
TBD (Competitive bid): Contract with Community Based Social Marketing specialists (averaging \$35,000 / year x 3 years). Consultant selected through a competitive application process.		\$ 105,000	\$ -	\$ 105,000
Equipment/Tools/Supplies				
Supplies for strategy implementation (e.g. decals, stickers, signs, etc)		\$ 20,000	\$ -	\$ 20,000
Interpretive display/signage at Minnesota Zoo		\$ 6,000	\$ -	\$ 6,000
Printing				
			\$ -	\$ -
Travel expenses in Minnesota				
			\$ -	
Other				
			\$ -	
COLUMN TOTAL		\$ 191,580	\$ -	\$ 191,580
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State:				
N/A			\$ -	
State:				
The Zoo's general operating fund will provide additional support to the project, including utilities and administrative costs (est. at 15% of project budget).	pending	\$ 28,587	\$ -	\$ 28,587
In kind:			\$ -	
N/A				
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS	Amount legally obligated but not yet spent	Budget	Spent	Balance
N/A				

DRIVING CONSERVATION BEHAVIOR FOR MUSSELS AND WATER QUALITY



Minnesota Zoo will develop research-supported strategies to engage the public in specific conservation behaviors they can take in order to improve water quality and mussel health across the state.

Project title: Driving Conservation Behavior for Mussels and Water Quality

PROJECT MANAGER QUALIFICATIONS: Dr. Emily Kalnicky, Evaluation and Research Specialist at Minnesota Zoo and University of Minnesota Institute on the Environment (IonE) Fellow, will serve as project manager for the proposed work. Kalnicky's lifelong career interest and passion for developing programming and research focused on connecting youth and adults to nature began more than 20 years ago as a volunteer at the Henry Vilas Zoo in her hometown of Madison, WI. She holds a doctorate in ecology from Utah State University, a master's in natural resources and environmental sciences from the University of Illinois at Urbana-Champaign, and bachelor of science degrees in zoology, psychology and Spanish from the University of Wisconsin-Madison. Kalnicky is an ecologist with extensive experience using a social-ecological systems, environmental, and conservation psychology approach to better understand pressing environmental concerns including fostering environmentally responsible behavior, invasive species management, and species conservation. Kalnicky has spent her career in a variety of museum contexts directing education and research programs, including her current position at Minnesota Zoo where she oversees all social science research and evaluation efforts. Kalnicky is the recipient of numerous research grants, awards, and scholarships to support her work and she has published her work in a variety of peer-reviewed scientific journals. She is an experienced public speaker and has presented her research to a variety of scientific and non-scientific audiences.

For the proposed project, Kalnicky will serve as Project Manager, where she will oversee all project planning, development, and implementation. She will provide scientific guidance, manage the competitive bid professional service contract, manage budgets, prepare reports and prepare any resultant peer-reviewed publications.

ORGANIZATION DESCRIPTION: Minnesota Zoological Garden

The Minnesota Zoo is a unique state agency. Established in 1978 to provide Minnesota residents and guests with an opportunity to experience animals from the exotic to the familiar in natural habitats, today the Zoo is one of the State's premier cultural, educational and conservation institutions.

The Minnesota Zoo's mission is ***to connect people, animals and the natural world to save wildlife***. With 1.3 million guests a year, over 2.7 million website hits annually and state-wide outreach programs reaching thousands more, the Zoo is in an excellent position to strengthen Minnesotans' awareness and understanding of our State's commitment to wildlife, science and conservation. The Zoo is the State's largest environmental educator with more than 500,000 participants in Zoo education programs.

The Minnesota Zoo is also a leader in conservation – directing efforts and partnering with others on a variety of conservation programs at the Zoo, in Minnesota and across the globe. Over the past seven years, the Zoo has enhanced its efforts to focus on Minnesota wildlife and habitats, including projects to conserve Minnesota's native moose, bison, mussels, turtles, and prairie butterflies. Advancing the science of wildlife conservation is an important part of the Zoo's work, as evidenced by the Zoo's research on wildlife behavior, ecology, genetics, disease, and conservation techniques.

The Zoo has a proven record of using its resources efficiently and effectively, ***matching*** the State's investment with private funds and earned income.